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(19) **United States**(12) **Patent Application Publication****Kitching et al.**(10) **Pub. No.: US 2011/0031969 A1**(43) **Pub. Date: Feb. 10, 2011**(54) **ATOMIC MAGNETOMETER AND METHOD OF SENSING MAGNETIC FIELDS**(75) Inventors: **John Kitching**, Boulder, CO (US);  
**Svenja Knappe**, Boulder, CO (US);  
**Jan Preusser**, Boulder, CO (US);  
**Vladislav Gerginov**, Braunschweig (DE)Correspondence Address:  
**Steve Witters, PLLC**  
**930 Woodland Ridge Circle**  
**LaGrange, KY 40031 (US)**(73) Assignees: **GOVERNMENT OF THE UNITED STATES OF AMERICA, AS REPRESENTED BY THE SECRETARY OF COMMERCE, THE; THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY**(21) Appl. No.: **12/537,922**(22) Filed: **Aug. 7, 2009****Publication Classification**(51) **Int. Cl.**  
**G01R 33/032** (2006.01)(52) **U.S. Cl.** ..... **324/304**(57) **ABSTRACT**

A magnetometer and method of use is presently disclosed. The magnetometer has at least one sensor void of extraneous metallic components, electrical contacts and electrically conducting pathways. The sensor contains an active material vapor, such as an alkali vapor, that alters at least one measurable parameter of light passing therethrough, when in a magnetic field. The sensor may have an absorptive material configured to absorb laser light and thereby activate or heat the active material vapor.

